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June 14, 2023

BY RESS

Nancy Marconi
Registrar
Ontario Energy Board
2300 Yonge Street, Suite 2700, P.O. Box 2319
Toronto, Ontario M4P 1E4

Dear Ms. Marconi:

Re: EB-2022-0156 – Enbridge Gas Inc. – Selwyn Pipeline Project
EB-2022-0248 – Enbridge Gas Inc. – Mohawks of the Bay of Quinte First Nation Pipeline Project
EB-2022-0249 – Enbridge Gas Inc. – Hidden Valley Pipeline Project

I am writing on behalf of Environmental Defence in response to Enbridge's letter of June 13, 2023 regarding supplementary interrogatories.

Further discoveries are needed to explore the issues raised in our letter of June 7, 2023. Enbridge's letter unintentionally highlights the need for further discoveries by making arguments on factual issues that clearly require further evidence. We address each argument in turn below, not with the goal of arguing the merits of any issues, but to show that further discoveries are needed:

- Enbridge argues that "the monthly customer charge is included as displayed at Attachment 6 to the response." This is misleading and does not resolve the main issue that Environmental Defence wishes to explore – namely that the Guidehouse cost comparison does not appear to account for the monthly gas customer charges (worth approximately $5,973.85 over 15 years).[1] The Guidehouse spreadsheet simply lists the monthly charge but does not actually incorporate it into the formulas of its model. We have confirmed this with the "Trace Dependents" command in Excel (see Attachment 1 to this letter).[2] Further discoveries are required to determine the truth and explore the issue.

  It is unclear if this problem also exists in the analysis conducted by Enbridge staff because the costs savings figures appear in the Enbridge spreadsheet as static numbers, not formulas, making it impossible to determine the method by which they were

[1] EB-2022-0200, Exhibit 8, Tab 2, Schedule 7, Attachment 2 (calculation:29.37*12*1.13*15).
[2] The Trace Dependents command determines if data from a cell is used as an input to a formula elsewhere in the excel file. The result is shown in Attachment 1.

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calculated (as discussed below).

- Enbridge argues that "increases to the Federal carbon charge to $170/tCO2e by 2030 is included as displayed at Attachment 7." This is misleading and does not resolve the main issue that Environmental Defence wishes to explore – namely that the Guidehouse cost comparison does not appear to account for the increases in its formula. As with the monthly customer charge, no formula actually depend on future carbon prices.

  As above, it is unclear if this problem also exists in the analysis conducted by Enbridge because the costs savings figures appear in the Enbridge spreadsheet as static numbers, not formulas, making it impossible to determine the method by which they were calculated (as discussed below).

- Enbridge argues that "the SES is included as displayed at Attachment 6 to the response." This is misleading and does not resolve the issue that Environmental Defence wishes to explore – namely that the Guidehouse cost comparison does not appear to account for the SES. Again, no formula in the Guidehouse model actually depend on SES figures.

  Again, it is unclear if this problem also exists in the analysis conducted by Enbridge staff because the costs savings figures appear in the Enbridge spreadsheet as static numbers, not formulas, making it impossible to determine the method by which they were calculated (as discussed below).

- Enbridge vaguely justifies its decision to exclude certain federal rebates and loans from the customer cost-effectiveness calculations, stating: "federal rebates are included in the analysis as described on Page 4 of the response, to the extent which the Company believes is appropriate." However, they have not clearly confirmed exactly which rebates are included or excluded, nor justified why specific rebates were excluded and cannot be accounted for.

- Enbridge argues that any analysis of the impact of its proposed rate design and extra line charge policy is irrelevant. This is clearly not the case. Although those policies may not be approved, their potential approval could have a significant impact on customer attachments and the revenue needed to offset the costs of this project. This is particularly the case with respect to the extra line charge, which could require customers to pay up to tens of thousand of dollars up front out of their own pocket to connect to the gas system.[3] The possibility (or likelihood) of these policies coming into place as these projects are completed is something worth at least considering based on evidence.

- Enbridge argues that the inclusion of cooling savings that accrue to customers who switch to heat pumps instead of gas are too complex to analyze. However, both Dr. McDiarmid and the Energy Futures Group have done so in recent OEB proceedings.[4]

[3] See our letter of June 7, 2023 for details.
[4] Dr. McDiarmid's evidence in EB-2021-0002 and EB-2022-0157; Evidence of the Energy Futures Group in Ontario Energy Board File # EB-2022-0200, p. 23 (link) (link for sources).

There is no reason why Guidehouse could not also do so.

- Enbridge defends the upfront cost figures included in its evidence. However, its arguments to not replace the benefit of supplementary interrogatories, which, for example, could confirm if Environmental Defence's critiques are accurate, request comparisons of Enbridge's figures with others, and seek revised analysis based on reputable third-party cost figures.

- Enbridge argues that it provided underlying calculations and formulae. That is true for the Guidehouse analysis but not for the analysis that Enbridge undertook itself. Enbridge says that the calculations and formulae underlying its own analysis appear in attachment 7. This is simply not true. In particular, the savings figures appear in the Enbridge spreadsheet as static numbers, not formulas, making it impossible to determine exactly how they were calculated and what factors were included. We have included a screenshot in Attachment 2 to this letter to show the lack of formulae.

Finally, we note that an analysis of the cost-effectiveness of heat pumps need not be nearly as fraught or complicated as Enbridge is causing it to be in this case. Typically, a consultant would calculate a base case that corresponds to the most likely or average scenario, often accompanied by a sensitivity analysis that examines the impact of a range of combinations and permutations of key variables and factors.[5] Unfortunately, that was not provided in this case, and we were instead provided with two different models, each with significant but seemingly different gaps, a lack of underlying formulae for Enbridge's analysis, and a number of important unanswered questions, all of which necessitates further evidence to provide a clearer picture.

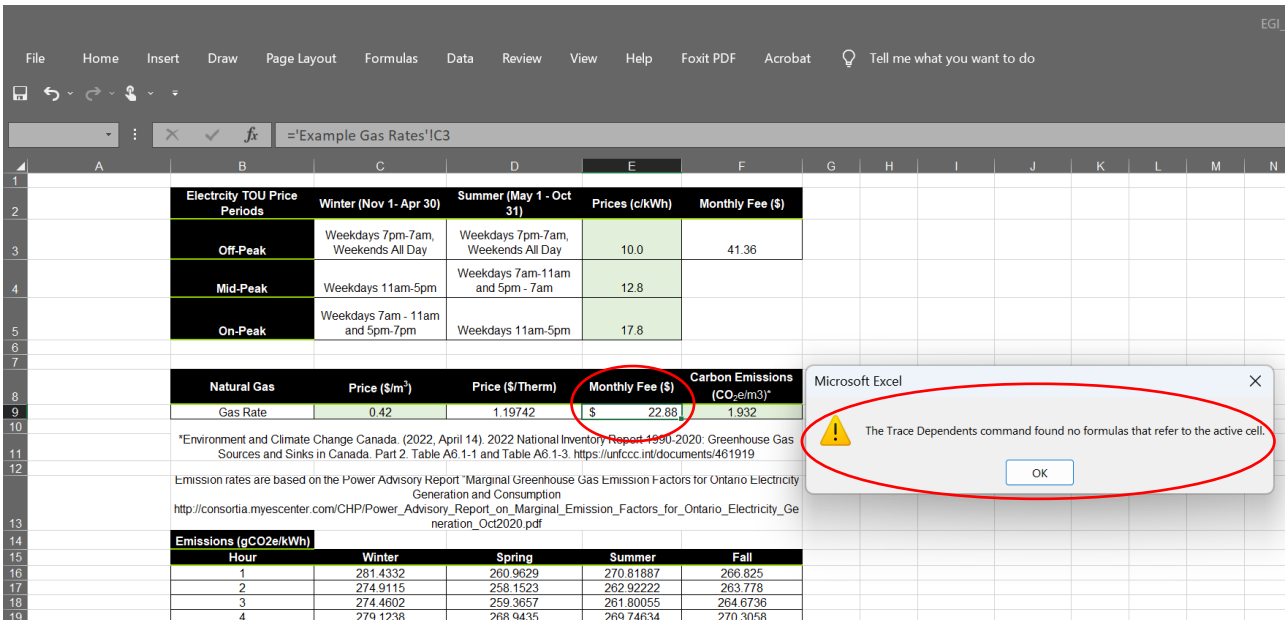
Yours truly,

Kent Elson

cc: Applicant and intervenors in the above applications

[5] See e.g Evidence of the Energy Futures Group in Ontario Energy Board File # EB-2022-0200, p. 23 (link).

Attachment 1: Printout of Guidehouse Model Showing No Formulas Refer to the Monthly Fee



Electrcity TOU Price Periods	Winter (Nov 1- Apr 30)	Summer (May 1 - Oct 31)	Prices (c/kWh)	Monthly Fee ($)
Off-Peak	Weekdays 7pm-7am, Weekends All Day	Weekdays 7pm-7am, Weekends All Day	10.0	41.36
Mid-Peak	Weekdays 11am-5pm	Weekdays 7am-11am and 5pm - 7am	12.8	
On-Peak	Weekdays 7am - 11am and 5pm-7pm	Weekdays 11am-5pm	17.8	

Natural Gas	Price ($/m^3)	Price ($/Therm)	Monthly Fee ($)	Carbon Emissions (CO_2e/m3)*
Gas Rate	0.42	1.19742	$ 22.88	1.932

*Environment and Climate Change Canada. (2022, April 14). 2022 National Inventory Report 1990-2020: Greenhouse Gas Sources and Sinks in Canada. Part 2. Table A6.1-1 and Table A6.1-3. https://unfccc.int/documents/461919

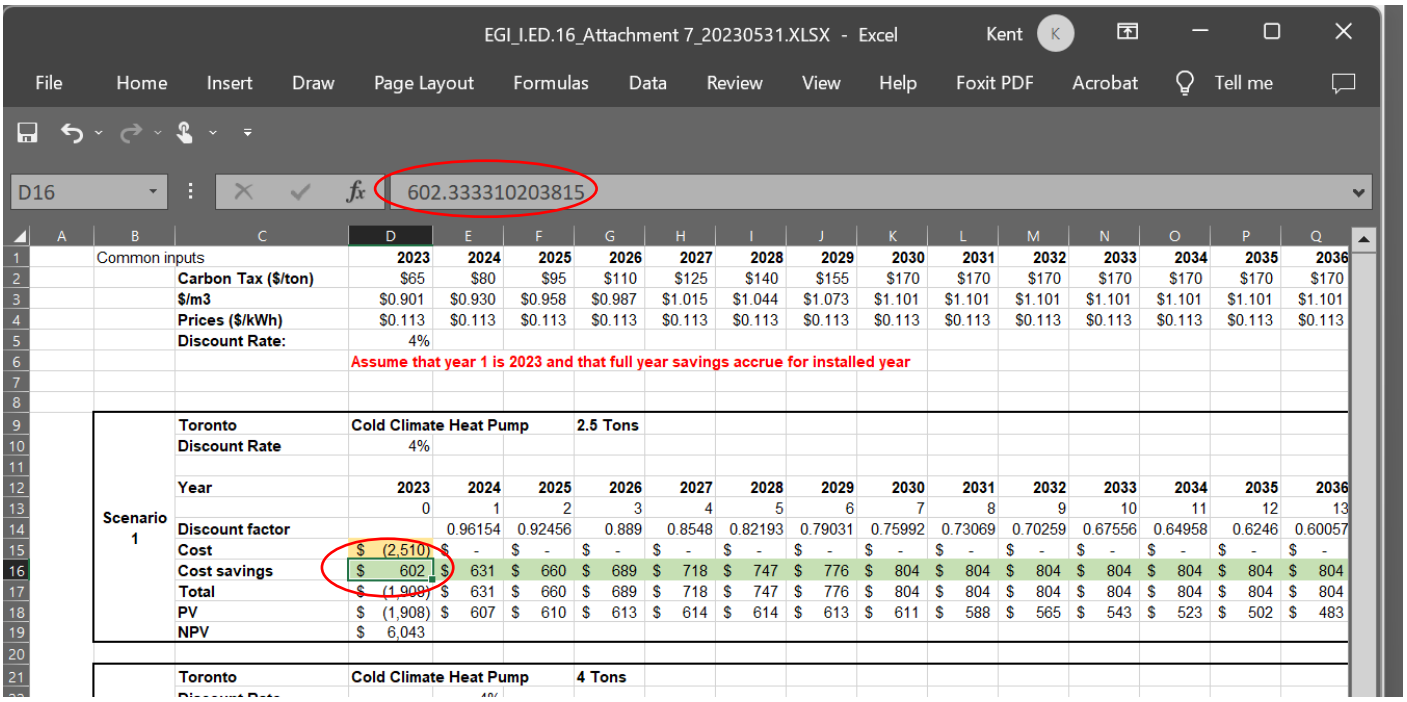
Emission rates are based on the Power Advisory Report "Marginal Greenhouse Gas Emission Factors for Ontario Electricity Generation and Consumption
http://consortia.myescenter.com/CHP/Power_Advisory_Report_on_Marginal_Emission_Factors_for_Ontario_Electricity_Generation_Oct2020.pdf

Emissions (gCO2e/kWh)

Hour	Winter	Spring	Summer	Fall
1	281.4332	260.9629	270.81887	266.825
2	274.9115	258.1523	262.92222	263.778
3	274.4602	259.3657	261.80055	264.6736
4	279.1238	268.9435	269.74634	270.3058

The Trace Dependents command determines if data from a cell is used as an input to a formula elsewhere in the excel file. The result are shown above

Attachment 2: Printout of Enbridge Model
Showing No Formulas Included Underlying Cost Savings Results



EGI_I.ED.16_Attachment 7_20230531.XLSX - Excel

D16: 602.333310203815

Common inputs		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
	Carbon Tax ($/ton)	$65	$80	$95	$110	$125	$140	$155	$170	$170	$170	$170	$170	$170	$170
	$/m3	$0.901	$0.930	$0.958	$0.987	$1.015	$1.044	$1.073	$1.101	$1.101	$1.101	$1.101	$1.101	$1.101	$1.101
	Prices ($/kWh)	$0.113	$0.113	$0.113	$0.113	$0.113	$0.113	$0.113	$0.113	$0.113	$0.113	$0.113	$0.113	$0.113	$0.113
	Discount Rate:	4%													
		Assume that year 1 is 2023 and that full year savings accrue for installed year													
	Toronto	Cold Climate Heat Pump			2.5 Tons										
	Discount Rate	4%													
	Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
		0	1	2	3	4	5	6	7	8	9	10	11	12	13
Scenario 1	Discount factor		0.96154	0.92456	0.889	0.8548	0.82193	0.79031	0.75992	0.73069	0.70259	0.67556	0.64958	0.6246	0.60057
	Cost	$ (2,510)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Cost savings	$ 602	$ 631	$ 660	$ 689	$ 718	$ 747	$ 776	$ 804	$ 804	$ 804	$ 804	$ 804	$ 804	$ 804
	Total	$ (1,908)	$ 631	$ 660	$ 689	$ 718	$ 747	$ 776	$ 804	$ 804	$ 804	$ 804	$ 804	$ 804	$ 804
	PV	$ (1,908)	$ 607	$ 610	$ 613	$ 614	$ 614	$ 613	$ 611	$ 588	$ 565	$ 543	$ 523	$ 502	$ 483
	NPV	$ 6,043													
	Toronto	Cold Climate Heat Pump			4 Tons										